COMBINATORICS SEMINAR
Blockers, Subspace Arrangements And Ideals

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Abstract:

The *blocker* of a set family A is the collection of inclusionwise minimal sets that intersect all sets in A. This construction is well-known in combinatorics and combinatorial optimization. The corresponding construction on set partitions (and more generally on geometric lattices) arises in the study of vanishing ideals of arrangements of linear subspaces in a vector space.

I will discuss some examples and properties of the blocker construction, beginning with some new results on blocker duality in general posets. I will then describe the relevance of this concept for vanishing ideals that are generated by products of linear forms. Finally, connections with some topics in external combinatorics will be mentioned.

The talk is based on joint work with A. Hultman, I. Peeva and J. Sidman.